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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,969	08/04/2003	Robert Joseph Lyons	122049 (GEGRC 0103 PA)	5178
6147	7590	05/17/2005	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			POLYZOS, FAYE S	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

10/633,969

Applicant(s)

LYONS ET AL.

Examiner

Faye Polyzos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-11, 13-16 is/are rejected.
- 7) ☒ Claim(s) 2,12,17-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-5, 13 and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by *Iwanczyk* (US 5,773,829).

Regarding claim 1, *Iwanczyk* discloses a conversion device for use in an imaging system comprising: a first perforated plate portion forming a plurality of collimator channels (20) separated by a plurality of thin collimator walls (34); a second perforated plate portion forming a plurality of scintillator channels (22) separated by a plurality of thin scintillator walls; reflective coating applied to the inside scintillator surface of the plurality of thin scintillator walls (60); a scintillator material filling the plurality of scintillator channels (64) (Fig. 2 and col. 7, lines 53-67 and col. 8, lines 36-47).

Regarding claim 3, *Iwanczyk* discloses collimator channels comprising a spacing pitch approximately less than or equal to 2mm (See Generally Fig. 2 and col. 5, lines 15-18).

Regarding claims 4-5, *Iwanczyk* discloses a collimator channel comprising a width approximately less than 500 microns and a

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collimator wall thickness of approximately 100 microns (Generally Fig. 2 and col. 8, lines 23-24).

Regarding claim 13, *Iwanczyk* discloses the reflective coating comprises TiO<sub>2</sub> (col. 9, lines 23-29).

Regarding claim 15, *Iwanczyk* discloses an imaging system comprising: a perforated plate forming a plurality of scintillator channels separated by a plurality of thin scintillator walls; and scintillator material filling the plurality of scintillator channels (See Generally Fig. 2 and col. 8, lines 42-58).

Regarding claim 16, *Iwanczyk* discloses a method of conversion device for use in an imaging system comprising a perforated plane element to form a plurality of scintillator channels (34A) separated by a plurality of thin scintillator walls; coating an inside surface of the plurality of thin scintillator walls with a reflective coating; and filling the plurality of scintillator channels with a scintillator material (See Generally Fig. 2 and col. 7, lines 38-42).

***Claim Rejections - 35 USC § 103***

3. Claims 6-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Iwanczyk* (US 5,773,829) as applied to claim 1 above, and further in view of *Warren* (US 6,362,481 B1).

Regarding claims 6-8, *Iwanczyk* discloses each scintillator segment surrounded on each side and its top by an optical reflector to

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reflect light back into the scintillator segment where the optical reflector consists of an epoxy doped with titanium dioxide (col. 8, lines 42-58 and col. 9, lines 5-6). Iwanczyk does not specifically disclose of glass. Warren discloses the scintillator material comprises of luminescent glass dispersed in a glassy matrix wherein the luminescent glass comprises a glass ceramic containing crystalline particles (col. 2, lines 23-33 and col. 4, lines 24-35). Warren teaches scintillator material disposed can be made up of rare earth hosts and trivalent rare earth activator oxides and the scintillator composition may also include one or more of the transparency promoters and light output restorers (col. 4, lines 24-35). Therefore, it would have been obvious to one skilled in the art to modify the apparatus suggested by *Iwanczyk* to comprise of luminescent glass as the scintillator material as disclosed supra by Warren to allow for a more versatile apparatus.

Regarding claims 9-10, Warren discloses the scintillator material comprises luminescent polymer (col. 2, lines 23-33 and col. 4, lines 24-35).

Regarding claim 11, Warren discloses the plurality of thin collimator walls is comprised of a high atomic number metal (col. 7, lines 63-65).

Regarding claim 14, Warren discloses the luminescent material that does not decompose when dispensed in molten glass, the luminescent material suspended in molten glass (col. 6, lines 20-32).

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***Allowable Subject Matter***

4. Claims 2, 12, 17-21 are objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding dependent claim 2, the prior art, as stated supra, does not disclose or fairly suggest an imaging system wherein a first perforated plate portion and a second perforated plate portion are formed from a single perforated plate element.

Regarding dependent claim 12, the prior art, as stated supra, does not disclose or fairly suggest an imaging system wherein a first perforated plate portion (collimator) comprises a copper perforated plate element.

Regarding dependent claims 17-21, the prior art, as stated supra, does not disclose or fairly suggest an imaging system wherein the second perforated plate is pressed onto the perforated plate element, heat the scintillator material and/or grind the perforated plate to form a single (block) monolithic structure.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Polyzos whose telephone number is


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571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FP



DAVID PORTA  
SUPERVISORY PATENT EXAMINER  
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